REMARKS

Claims 1-22 are pending. By this Response, claims 1 and 11 are amended, no claims are cancelled, and no new claims are added.

Claim Rejections – 35 U.S.C. § 103

Claims 1-4, 9, and 11 - 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Griess U.S. Patent No. 4,156,280 in view of Hoopes U.S. Patent No. 6,816,350. Applicant respectfully traverses the rejections for at least the reasons set forth below.

In the Office Action, Griess is characterized as disclosing sampling a primary voltage source (power line) at regular intervals, thereby generating a series of voltage readings (col. 2, lines 1,2); comparing the voltage readings to an under voltage trigger threshold; detecting an under voltage condition; storing a plurality of voltage readings; and initializing a restore response after the voltage level rises above a restore value. The Officers action notes that Griess does not disclose initializing an under voltage in response cycle that controls the electrical load when voltage readings are less than or equal to the under voltage trigger threshold for a predefined under voltage period; and storing a plurality of load restore counter values in memory before disengaging the load.

Hoopes is cited as disclosing an AC voltage protection circuit wherein the power lines are disconnected from the load thereby preventing damage that an under-voltage condition can cause (col. 3, lines 19-31). The Office Action asserts that it would have been obvious to one having ordinary skill in the art to have modified the utility monitor to include the Hoopes protection method to disconnect the power lines from the load and to merely set the threshold levels to disconnect at the "right levels" of voltage to prevent damage.

With respect to independent claims 1 and 9, Applicant respectfully disagrees with the characterization of Griess, and submits that the combination of Griess and Hoopes does not disclose all of the required elements. More specifically, neither Griess nor Hoopes discloses

"initializing an under voltage in-response cycle *that controls the electrical load* when the voltage readings are less than or equal to the under voltage trigger threshold *for a predefined under voltage time period*," "storing a plurality of load restore counter values . . . when the voltage readings decrease to below a voltage-power fail level, wherein the voltage-power fail level is less than the under voltage trigger threshold" and "initializing a restore response after the voltage level rises above a restore value *and is maintained above the restore value for an under voltage out time period.*"

Griess is directed to a utility monitor for detecting and storing power line disturbances (col. 1, lines 65-67). The utility monitor of Griess generates an interrupt output when the monitored voltage drops "below a present threshold and removes the interrupt output when the peak-voltage rises a preselected amount above the preset threshold level." (col. 2, lines 8-13). A number of cycles of the output sine wave voltage are stored before and after the interrupt (col. 2, lines 13-15).

The utility monitor of Griess does not "control the electrical load," as admitted in the Office Action. Furthermore, when the utility monitor of Griess detects that the voltage readings are under a voltage threshold, a response is not based on a "predefined under voltage time period." A response occurs based on crossing a voltage threshold, not on sustaining a threshold (col. 2, lines 8-13). As such Griess does not disclose "initializing an under voltage in-response cycle *that controls the electrical load* when the voltage readings are less than or equal to the under voltage trigger threshold *for a predefined under voltage time period.*"

Furthermore, the utility monitor of Griess does not store counter values when voltage readings fall below a "voltage-power fail level." The utility monitor of Griess stores counter values before and after receiving an interrupt signal (col. 2, lines13-15) as pointed out in the Office Action. The interrupt signal is generated when the voltage readings fall below a threshold voltage (col. 2, lines 8-13; col. 3, lines 15-21). Griess does not teach a "voltage-power fail

level." Griess merely teaches a single voltage threshold to which the voltage readings are compared.

Applicant has amended claim 1 and claim 9 to clarify that the "voltage-power fail level" is unique as compared to the "under voltage trigger threshold" by adding the language "wherein the voltage-power fail level is less than the under voltage trigger threshold" to both claims. By this amendment, no new matter is added. Support for this amendment can be found throughout the specification and more specifically at FIGS. 3-5.

Additionally, the utility monitor of Griess does not disclose "initializing a restore response after the voltage level rises above a restore value *and is maintained above the restore value for an under voltage out time period.*" First, Griess does not control a load, therefore it cannot initialize a restore response, nor can it include a restore value. Second, even if Griess does disclose initializing a restore response and a restore value, Griess does not teach that such an initialization depends upon maintaining the restore value for an under voltage out time period. As previously discussed, the utility monitor of Griess responds to changes in magnitude of the monitored voltage, but does not respond as a function of time. An interrupt signal is generated when the voltage readings fall below a threshold voltage (col. 2, lines 8-13; col. 3, lines 15-21). The interrupt signal is then removed when the peak voltage rises a preselected amount above the preset threshold value (col. 2, lines 11 to 13). Griess discloses a utility monitor that responds as a function of voltage magnitude, but not as a function of time. Therefore, Griess does not teach that a response that is maintained above the restore value for an under voltage out time period.

Furthermore, these missing elements are not disclosed in Hoopes. Hoopes discloses an AC voltage protection circuit that monitors interterminal voltages for over-voltage and under-voltage conditions (col. 1, line 64 to col. 2 line 11). As noted in the Office Action, the circuit disclosed by Hoopes interrupts the current path to a load via a switch when the voltage between the power and neutral line terminals is less than a predetermined minimum voltage (col. 3, lines

25 to 32). The protection circuit of Hoopes merely interrupts power to a load as a function of a single predetermined minimum voltage, and not as a function of time.

Because the protection circuit of Hoopes does not operate as a function of time, it cannot disclose "initializing an under voltage in-response cycle that controls the electrical load when the voltage readings are less than or equal to the under voltage trigger threshold *for a predefined under voltage time period*." Furthermore, because the protection circuit of Hoopes is a function of a single predetermined minimum voltage, and does not disclose storing counter values, Hoopes also fails to disclose the elements "*storing a plurality of load restore counter values . . .* when the *voltage readings decrease to below a voltage-power fail level,* wherein the voltage-power fail level is less than the under voltage trigger threshold" and "initializing a restore response after the voltage level rises above a restore value *and is maintained above the restore value for an under voltage out time period.*"

Accordingly, Applicant respectfully requests that the rejection to independent claims 1 and 9, claims 2-8 which depend from claim 1, and claim 10 which depends from claim 9, be withdrawn.

With respect to independent claim 11, Griess and Hoopes also fail to disclose all the required elements. More specifically, Griess in view of Hoopes at least fails to disclose disengaging and engaging an electrical load "as a function of a measured voltage from the primary voltage source *over a predetermined period of time*." As previously discussed, neither the utility monitor of Griess, nor the protection circuit of Hoopes operates as a function of time, therefore neither discloses this element of claim 11.

Accordingly, Applicant respectfully requests that the rejection to independent claim **11**, and claims 12-14 which depend from claim 11, be withdrawn.

Claims 8, 15-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Griess in view of Hoopes, and in further view of Hodge et al. U.S. 6,314,378. Applicant respectfully

traverses these rejections for the reasons set forth above, with respect to dependent claim 8, as well as for the following reasons.

With respect to independent claim 15, the combination of Griess, Hoopes, and Hodge et al. does not disclose all of the required elements. More specifically, Griess, Hoopes, and Hodge et al. at least do not disclose a memory arrangement adapted to store a plurality of under voltage threshold values and under voltage periods. As discussed previously, the utility monitor of Griess and the protection circuit of Hoopes operate as a function of a single threshold value, and do not disclose a memory arrangement adapted to store a *plurality* of under threshold values.

The distributed frequency relay invention disclosed in Hodge at al. teaches a method of monitoring a network frequency and disconnecting a load via a relay based on frequency disturbances (col. 1, lines 39 to 65). Hodge et al. teaches monitoring and detecting frequency disturbances, not under voltage conditions, and as such does not disclose a memory arrangement adapted to store a plurality of under threshold values.

Furthermore, even if the combination of Griess, Hoopes, and Hodge et al. did disclose a memory arrangement adapted to store a plurality of under threshold values, a memory arrangement adapted to store a plurality of *under voltage time periods* is not disclosed. As previously discussed, Griess and Hoopes teach systems and circuits that operate as a function of discrete under voltage threshold levels, and not systems and circuits that operate as functions of time. Therefore, the combination of Griess, Hoopes, and Hodge et al. does not disclose a memory arrangement adapted to store a plurality of *under voltage time periods*.

Accordingly, Applicant respectfully requests that the rejection of claim 15, and claims 16-22 which depend from claim 15, be withdrawn.

Conclusion

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

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